1

Explor. in Capt Raynolds Rept

Nuphar polysepalum ~~[illegible]~~ foliis late ovatis-orbiculatis sinu angusto profunde cordatis; floribus magnis sub globosis sepalis 9–12 concavis, medius maximis; petalis 12–18 spatulatis obtusis; staminibus numerosis; antheris apice truncato-appendiculatis; filamentis demum recurvis aequantibus s. eis brevioribus; ovariis unicolaté striati ~~stigmate coronato~~, radiis stigmatosis 13–21 disci umbilicati margine coronatum fere stigmatibus; baccis versus apicem constrictum nec rostratum sulcatis. —

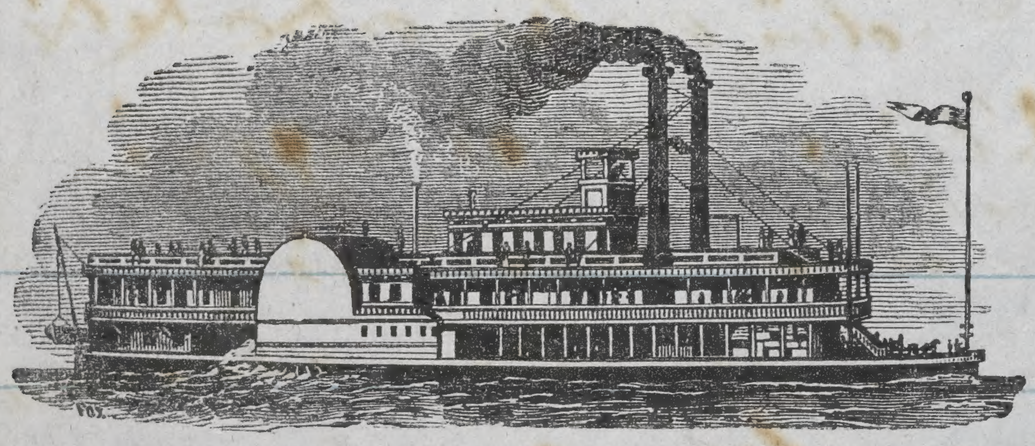
Hab. Lacus alpinos 6000–9000 ped alt. Montis Stopulorum.

131

Inhabits small mountain lakes in the Rocky Mountains from Colorado to the ~~sources~~ near Long's Peak of the Columbia River the sources of the Platte to those of the Lat 46 Dr F. V. Hayden collected it in the Capt W. F. Raynolds Exp. June 20th 1860 in a small Lake before Henry's Fork and Snake Fork of the Columbia River at an altitude of 6500 feet. Miss Merrill brought in the year 1862, ~~in petals~~ a vague account of the plants and some of the seeds, to verify her tale, from Lake Gibson near Longs Peak, and finally Dr Parry gathered ample material in Osborne Lake ~~8800~~ at an altitude of near Longs Peak.

where it grows with Menyanthes trifoliata, Utricularia intermedia, Sparganium, Carex etc. he found it in flower in August, the temperature of the water being at the time 58°.

The Leaves are ~~very~~ more like those ~~similar~~ of those of N. luteum ~~advena~~



Shipped, By Emmo Sander

IN GOOD ORDER AND CONDITION, On account and risk of whom it may concern, on board the good **Steamboat** called the Keo Kuk Packet whereof H. Johnson **is Master** for the present voyage, now lying at the Port of **Saint Louis,** and **bound** for ~~Keo Kuk~~ La Fourche the following packages or articles, marked or numbered as below, which are **to be delivered,** without delay, in like good order, at the said Port—Unavoidable dangers of the River and Fire only excepted—**unto** ~~ or assigns, he or they **paying freight** for said goods at **the rate of** Freight Paid $2 Dell and **Charges**

In Witness Whereof, The Owner, Master, or Clerk of said Steamboat, hath affirmed to three Bills of Lading, all of this tenor and date, one of which being accomplished, the others to stand void.

Dated at St. Louis, this 29th day of July 1864.

Published and for sale by C. Witter, 27, South-east corner of Walnut and Second streets, St. Louis.

MARKS.	ARTICLES.	WEIGHT.
Jas P. Roy. Capt. & Q. C.S. Ft. Leavenworth For E. Coues. M. D. Care Medical Director Santa Fe N. M. Via St. L. & Ft. S. R.R.	1 Box Shot No 10. J. Carpenter	52 lbs.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
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MO

2

than those of our N. advena being more oval in outline and thus ~~triangular~~ deltoid obtuse obtuse, and with a narrower more closed sinus, the lobes more gradually separating from one another; In N. advena I find the sinus often of 40 degrees and the lobes then acute triangular with points; ~~that~~ ~~however~~ but this form of the sinus and shape of the leaf is by no means constant, for whenever the substance of the leaf is more fully developed, the lobes become broader, more obtuse and the sinus of course narrower, as I find it in specimens from Albany while sometimes as in specimens from Houston Texas, the sinus becomes closed up and the lobes even overlap. our species were floating when observed.

These leaves of N. polygonophylla are 8½ – 9½ inches long and 6½ – 7½ inches wide, ~~[illegible]~~ ~~an average of~~ These 5 leaves differ other species and ~~an average of~~ the same number of leaves of N. lutea give each an average proportion of length and width = 10 : 8. – while the same number of leaves of N. advena from different parts of the country give the proportion = 10 : 9. The difference is apparently small enough, but in the appearance of the leaf quite striking. I find also a difference in the venation of the leaves of these 3 species

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THE STATE OF MISSOURI, } ss.

COUNTY OF ST. LOUIS,

To Dr. Geo Engelmann Greeting:

You are hereby commanded that, setting aside all manner of excuse and delay, you appear before our **ST. LOUIS COURT OF COMMON PLEAS**, at the City of St. Louis, on the 12th day of June 1865, at 10 o'clock, a M., then and there to testify, and the truth to say, in a certain cause pending in said Court, wherein Wm. Ballentine plaintiff and North Missouri Rail Road Company defendant on the part of deft and herein you are in no wise to fail.

Witness, LEON J. PAPIN, Clerk of our said Court, with the seal thereof hereto affixed, at office, in the City of St. Louis, this 10th day of June in the year of our Lord eighteen hundred and sixty-five

Leon J. Papin, Clerk.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Copy

3 there being ~~about~~ nearly 3 times as many veins ~~joining~~ connected with the midrib as there ~~connect with~~ issue from the base, while in both N. lutea and N. advena I notice only about twice as many ~~for~~ for the midrib as from the base. It may not be out of place to notice in this connection that ~~by~~ the distribution of the veins all the species of Nymphaea ~~which I have been able to compare~~, can be readily distinguished from all those of Nymphaea (as far as my observation extends); ~~the~~ the former having by far the largest number of secondary ribs connected with the midrib, and ~~frequently~~, while in Nymphaea most ribs are basilar, and few only come from the midrib. ~~The~~

129

The flowers of some ~~species~~ plants are a little emersed. The flowers of some species are the largest of any known Nymphaea, and are composed of ~~upwards~~ 12 sepals, many more than in any other species, whence the name;

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

St. Louis 17th March 1865

George Engelmann, M. D.

Dear Sir

You are respectfully requested to attend a regular meeting of the Board of Trustees of the St. Louis College of Pharmacy at the Room of the St. Louis Medical Faculty.

on Tuesday Evening March 21st at Half past 7 o'clock P. M.

Punctual attendance is requested.

By order of the chairman

James McBride

Sect.

0 1 2 3 4 5 6 7 8 9 10
cm
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4/ the sepals being concave are partly rolled over the petals, the inner ones curved in the quite partially concealing the greater part of the large mass of stamens, the shape of the flower is therefore globular cupshaped, sometimes 1 to 2 inches in diameter, but when fully laid open it measures from 4½ to 5 inches, ~~diameter~~ The sepals are arranged not as it was at first supposed in 3 or 4 whorls of 3 sepals each but in the 5/13 arrangement, or perhaps, the outer ones in 2/5 ~~and then~~ gradually changing into the 5/13 ~~position~~ divergence; the sepals increase in size and petaloid appearance from the outermost or first, to the 7 or 8th when the decrease again in size, but become of more delicate petaloid structure and colour. the outer ones are oval 1¼ – 1½ inches long, green with yellowish margins; the next 2 or 3 are almost orbicular, 2 – 2½ inches long, and of a yellowish colour green at base, and often with the peach blossom the following ones are the largest (often of a transverse form) obovate, 2½ inches long, yellow, with the peach blossom tint of a deep "opaque" yellow, the innermost are gradually again orbicular – spatulate 1½ – 1 inches long

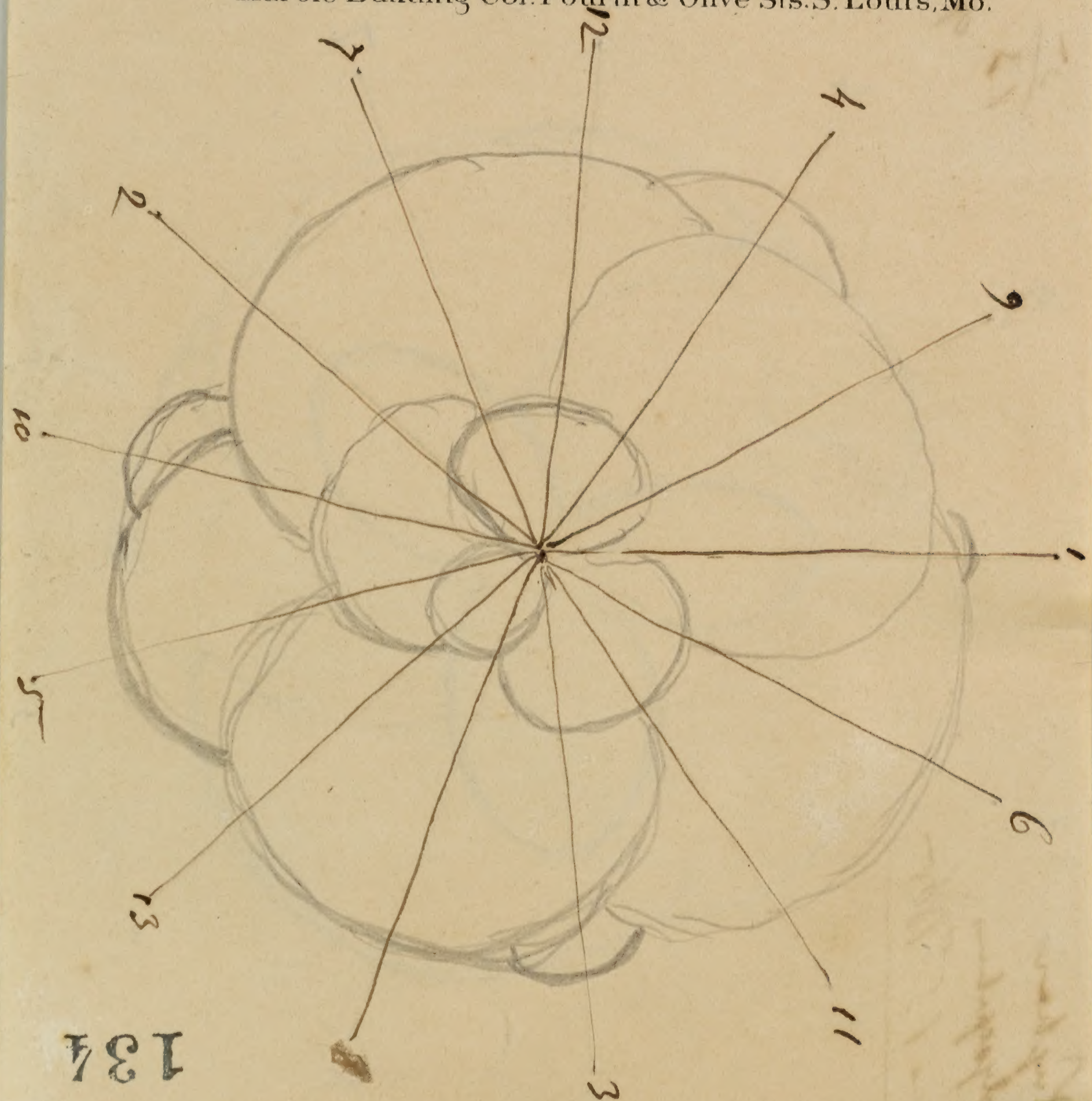
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

127

5. Yellow ~~or~~ especially on the outer edge, Brown V. Reddish. Dr Parry informs me that he ~~there are often~~ recently found this; below these inner sepals and the petals. The petals themselves are spatulate truncate 12 to 18 in number, 1" long & 6 l. ~~long~~ broad (Parry) with dry specimens & fine the only 5 l. long & from 2-4 lines wide; ~~gradually thickened to the stamens~~ ~~They are deep yellow, or~~ in Dr Parry's specimens deep red in the middle & yellow at base & tip, the stamens ~~are numerous~~ much more numerous than in the allied species, anthers & the ~~together~~ together with the appendage are deep red ~~It~~ relieved by the bright yellow (oval pad, hinged as in the genus) pollen. ~~the outer~~ the outer ones shorter & broader the inner ones longer & narrower; at maturity they ~~are~~ spring or recurved — deeply umbilicate & Stigmatic disc ~~usually~~ with 13-24 ~~or~~ ~~occasionally~~ (usually 16-19 irregularly) stigmatic rays, with extend to near the crenate margin. ~~of the~~ yellowish green or deep red or red (with yellow edged ~~margin~~). see note ~~#~~

Dr Parry says the fruit, ~~the~~ smooth & glossy, deep red & spotted especially towards the top" & he brought dry is (dry) 1 3/4 long & 1 1/2" in diameter

ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST,
Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.



134

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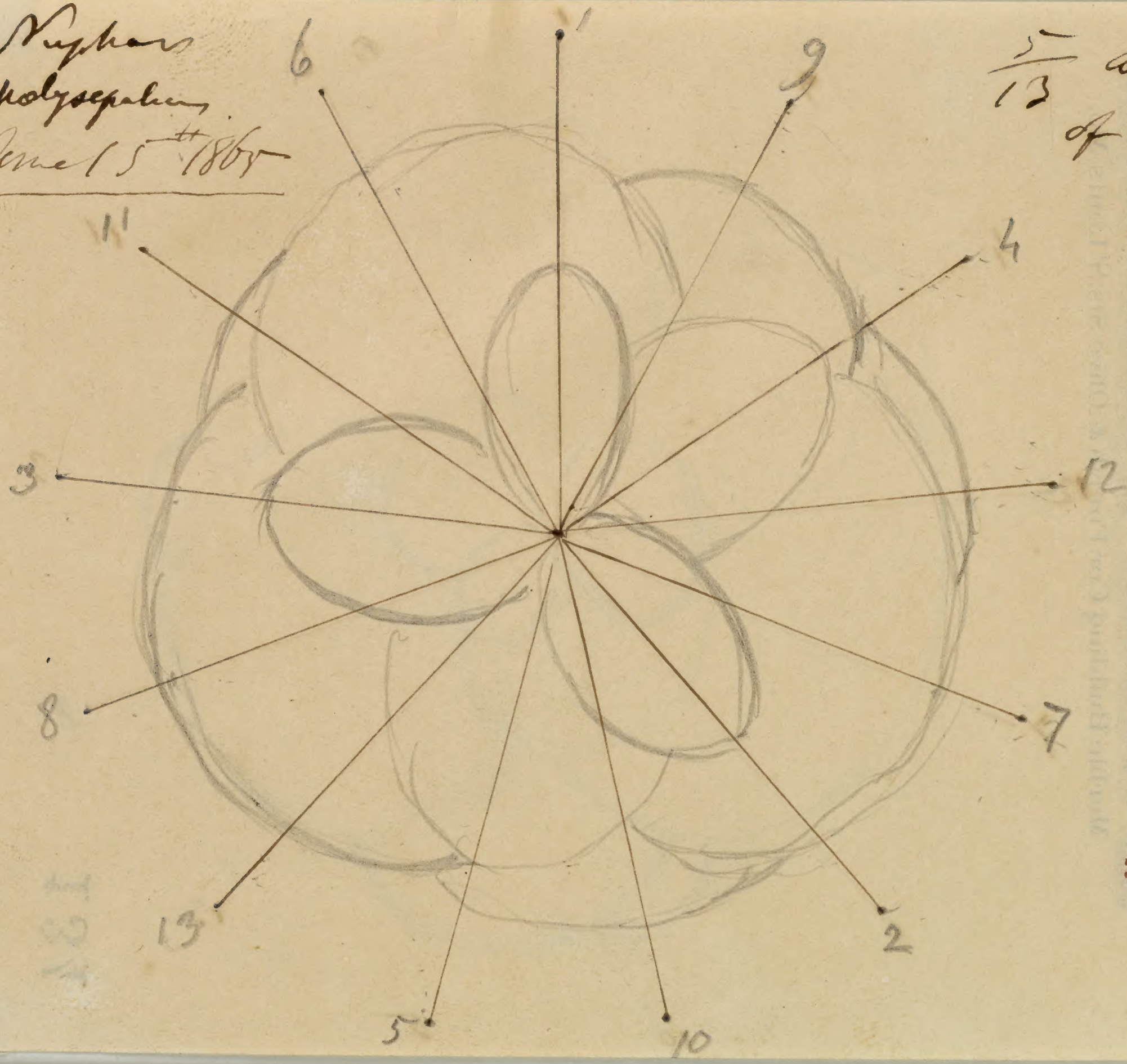
Nuphar polysepalum
June 15th 1865



5/13 arrangement of sepals

verte

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disc in the dried specimen before me 9–11 lines in diameter :–

(the only one that I dispose of) — Mr. Bailey

~~Mr.~~ In the written specimen of N. advena Dff. the disc entire and the rays of the stigma not ~~extending~~ to near the margin, while in N. lutea they do reach nearly to the crenulate edge just as in N. ~~port~~ polysepala —

128

National Archives of Canada
George Ferguson Papers

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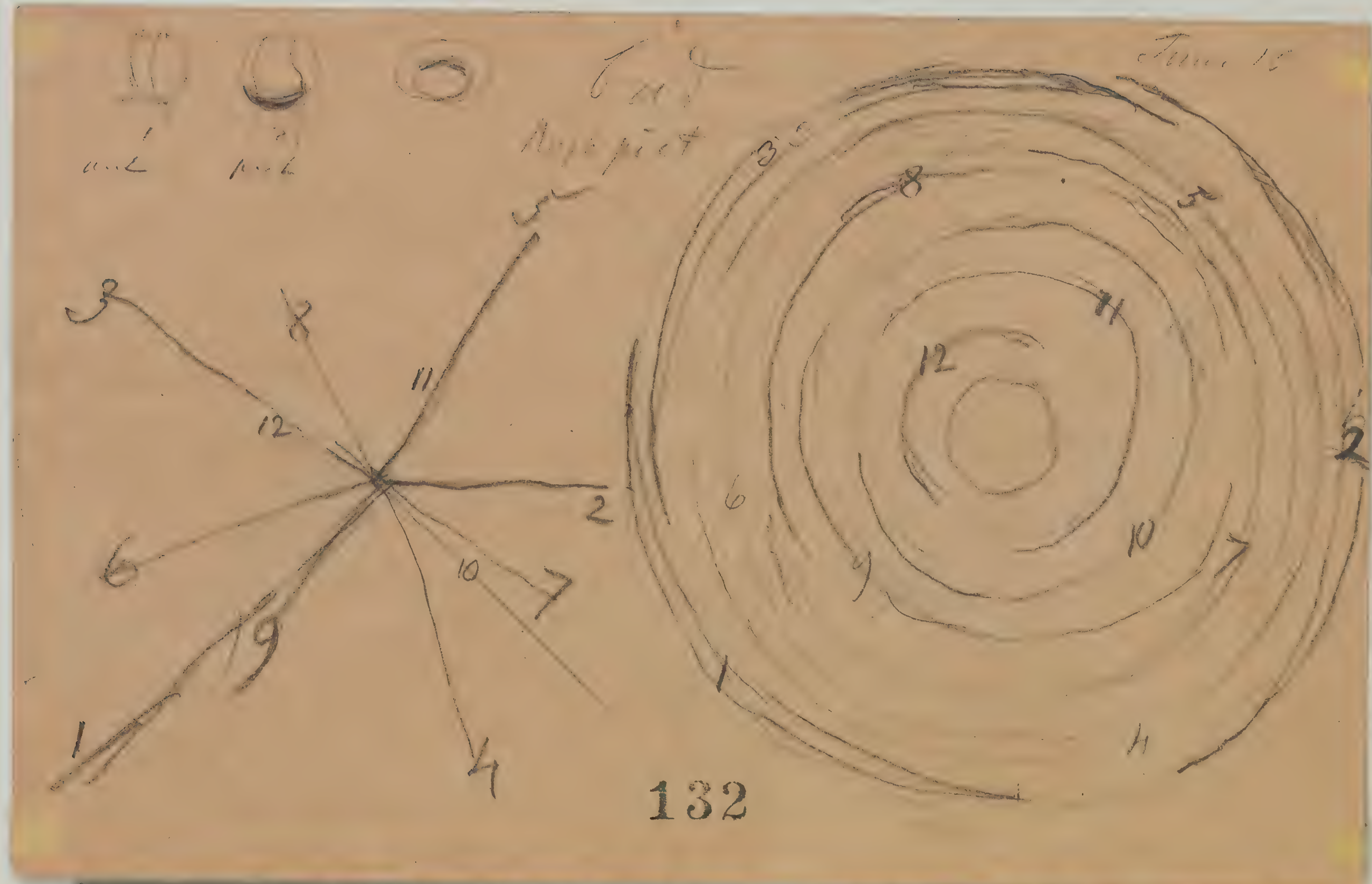

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Enno Sander,

Ecke der Zweiten und Walnut Straße,

unter Barnum's Hotel,

Saint Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN FUND

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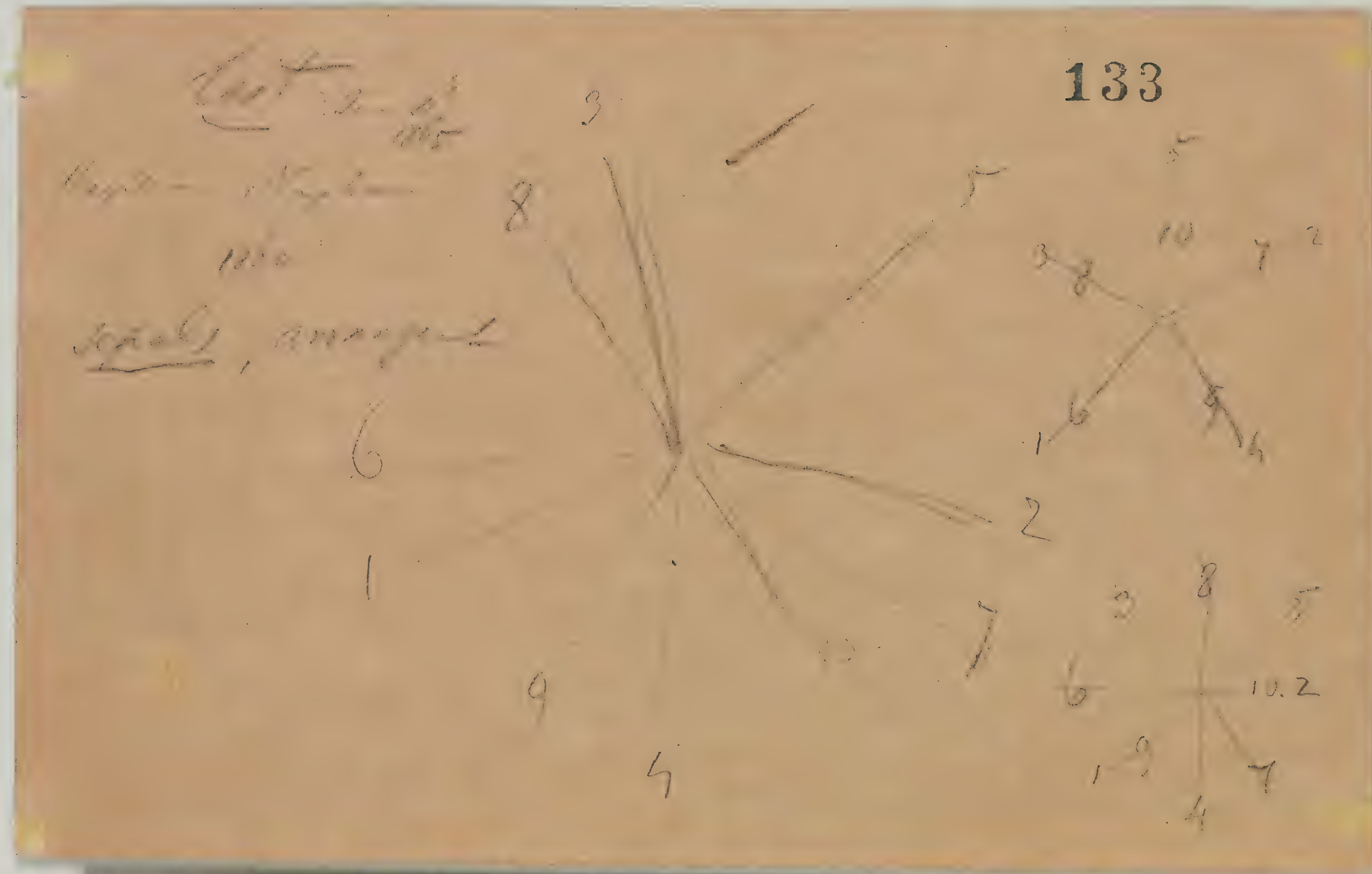

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Enno Sander,

Ecke der Zweiten und Walnut Straße,

unter Barnum's Hotel,

Saint Louis, Mo.

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GEORGE ENGELMANN PA

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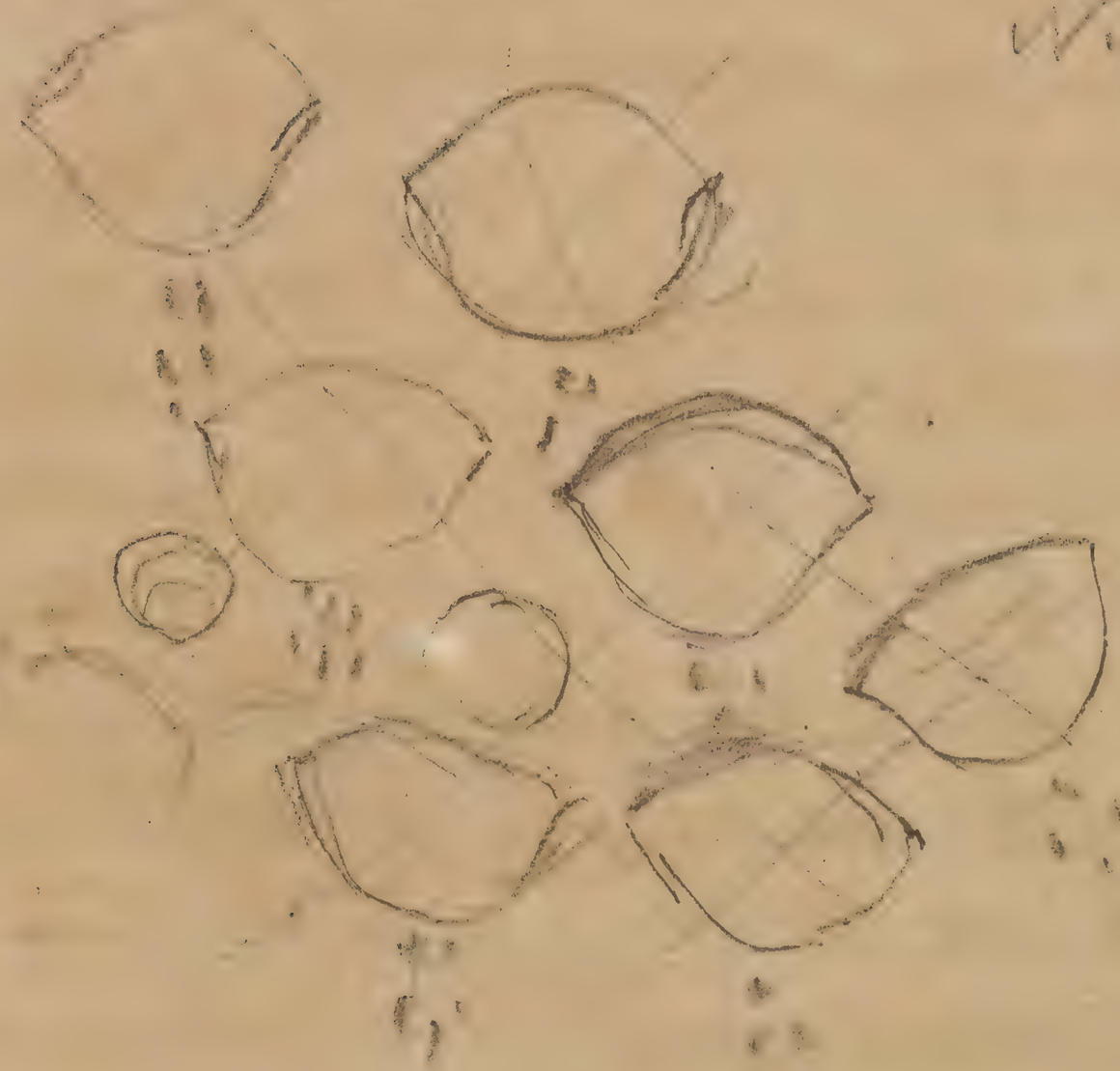
Phaseolus

Wigelow Arizona
1860



136

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Detroit

Nuphar advena November 1865
from Park Marsh

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cm
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Missouri Botanical Garden
George Engelmann Papers

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cm
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(4 mins)

Next lesson starts ~~at~~ 10-17 running until the end of the school day

— school — 3.15 ~~allow~~ terminating by 3.30 at the latest

(8 minutes) marks the end of the lesson

(as back in my opinion)

— Return — 8 mins until the end of the lesson

(2 mins)

0 1 2 3 4 5 6 7 8 9 10
cm
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Emil Sander,

Ecke der Zweiten und Walnut Straße,

unter Barnum's Hotel,

Saint Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN FUND

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cm
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Nuphars
July IX 64

number of seeds of stigma ? or
extending to margin of stigma ? assist Cater ?
not as in adena ?

stigma remote as in Kalmiana ?
or within anthers as in adena ?

petals broad or narrow or of different shape
as long or within or shorter
than the sepals or shorter
than sepals or equal ?

beaked, truncate or how ?

142

Nuphar advena, sagittifolia with 6 sepals
Cater, Kalmiana 5 —
sagittifolia has no petals

0 1 2 3 4 5 6 7 8 9 10
cm
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Alex. Leich,
APOTHECARY & CHEMIST,
Cor. 4th & Olive Sts., St. Louis.

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Aspidium Noveboracense? Belle Isle July 20th 1865
mostly 6 sepals - one specimen 8 sepals - colored
purple at the base internally - leaves floating - very
thin - lobes approximate rounded.

M. verrucosum

144

Alexander Wood

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cm
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upper variegation
sections or petals

Wallerstile
section 7

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN LIBRARY

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Recd Jan 21st

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Notes on Nuphar pictum

Stigmatic rays irregular in number 13 – 19 of 12 specimens examined 4 had 18 rays 4 19 rays 3 had 16 rays 1 had 13 rays the larger plants having the largest number; the rays do not extend to the margin are often variable in length and as a general rule point in the direction outward of the rounded points of the irregular crenated edge of the stigma; Entire ovary mucronate umbilicate perpendicularly ridged on the outside by ridges corresponding to the projecting points of the crenated edge and the stigmatic rays

Petals broad spatulate (slightly concave) 12 & 16 somewhat variable in width yellow at their attachment to the ovary deep red towards the center and yellow at the tips, about 3/4 inch long 1/2 inch broad projecting slightly beyond the 1st row of stamens

Sepals in threes regularly in 3 circles alternating, rarely in 4 circles or with one or more petals irregularly developed –, outer smaller irregularly scoop shaped green with the margin inclined to yellow, next inner row of sepals larger broad orbicular - spatulate, with a wide attachment at base, more yellow than the outside sepals but the lower outside projection light green. (less concave than the outer row)

over

The section of the flower stem show regular star shaped holes attached to the longitudinal fibres — with the proper brain projecting into the holes.

The author is a resident off from made book of observations, notes on the spot. I and found by the help of the latter from water in to get a sufficient no. of specimens (picked up the boughs off my legs.) and took notes fulling to press each specimen as I entered them.

I hope you will find it sufficiently full with the three specimens I desire to answer the questions you might be kind enough to enclose and propose the needful queries I will make upon

In haste yours
C C Parry

Dunnyrate Dec 15th/64

1865

Missouri Botanical Garden
George Engelmann Papers

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cm
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; inner sepals generally narrower & shorter with a reddish tinge mostly on the outer edge. (which becomes more conspicuous in fading) in color resembling the deep blush of a rosey peach. (The whole flower is globular cup shaped. the upper edge of the sepals curving inward & concealing the greater part of the dense mass of stamens.) (P.S. something like the son of the first pressed specimen will give you the best idea. I suppose the dried specimen must be somewhat shrunk but you can probably make due allowance by comparing common species. with dried specimens of the same; or asking me.)

Anthers linear spatulate nearly as long as the filaments of a deep red color the upper surface poleniferous & coated with the yellow powder of pollen the anthers curving outward and forming a dense deep red rosulate disc in full flowering specimens reaching up to the inner edge of the stigmatic disc the developing ovary extending beyond and leaving the withered remains of anthers petals & sepals closely attached at the base. Fruit. (see specimen sent you) furrowed especially towards the top of a deep green color smooth & glossy.. Seeds (mature) enveloped in slimy cellular tissue (about a line in diameter)

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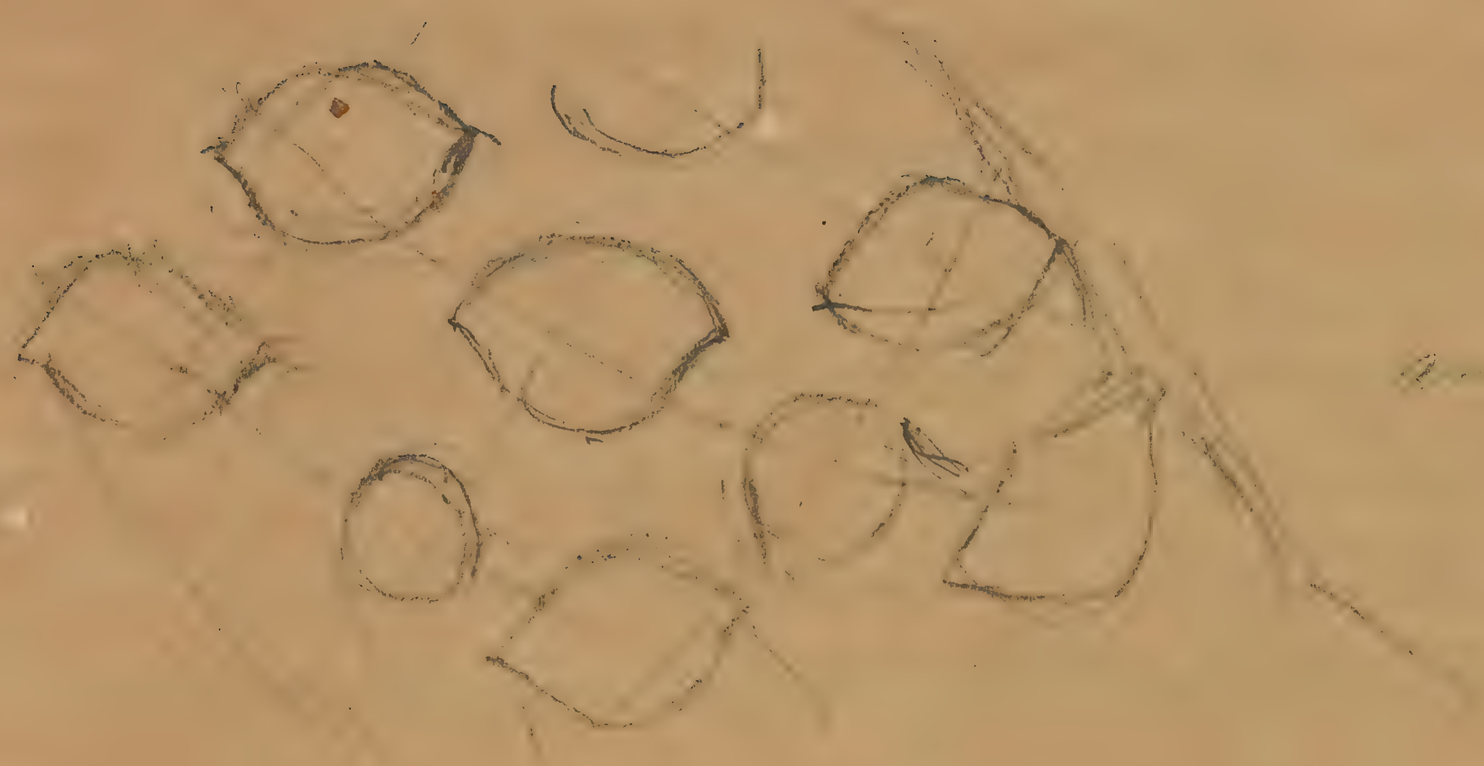
Set 1, from Belle Isle Nov. 1865

Hugh. Varian

138

upper side

lower side



a the figure

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Extract from Bloody Run Nov 1865

Stephanocoenia

139

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GEORGE ENGELMANN PAPERS

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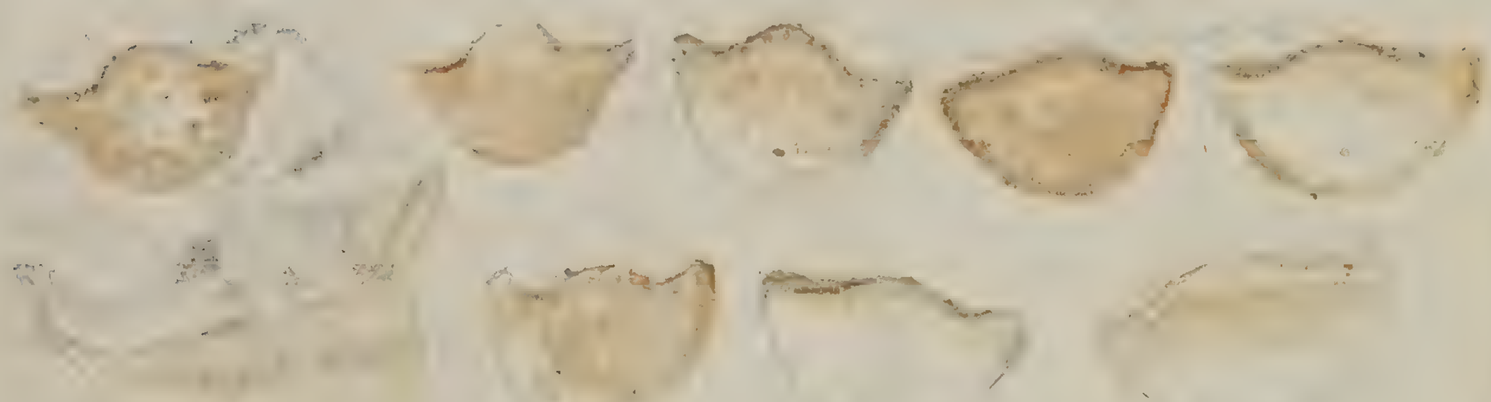
Grand Marais Mouth of Commo
Creek July 23rd 1865 Depth 6
external diameter largest 1 1/2 inch
yellow purple at the base —
internally purplish white and rec
ellar as in Mod. specimen at base
Cameo Pearl? Also closely
approximates Anodonta [illegible]
[illegible]

145

[illegible]



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Michigan Department of Conservation
George Emmerson Fish

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cm
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81-4

Nymphaea

0 1 2 3 4 5 6 7 8 9 10
cm
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MO

0 1 2 3 4 5 6 7 8 9 10
cm
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Gray Writes Aug 28 1865

The downy Nymphaea from Central N. York is

N. mirabilis DC. syst.

Paine of Utica has just gathered a scentless

Nymphaea near Lake Ontario, leaves immensely

large, veins very prominent beneath; therefore

probably N. uniformis DC. flowers apparently

= odorate, but odorless or almost entirely so.

0 1 2 3 4 5 6 7 8 9 10
cm
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Allenton, St. Louis Co. Mo.
Novbr. 14th, 1864.

Lieber HC. Doctor!

Beiliegend schicke ich Ihnen meine meteorologische Beobachtungen für den Monat October 1864. Wir sind soweit recht gesund und mit Entwurzeln der Sträucher und jungen Bäume beschäftigt. Sonst giebt's nichts Neues hier. Bitte schicken Sie mir doch Ihre Beobachtungen für Septbr. und October 1864, damit ich sie mit den meinigen vergleichen kann.

Ganz ergebenst.

H. A. Fendler.

George Engelmann M.D.
St. Louis, Mo.

Aug 25 1916

Articulated hair on petiole of Nymphaea [illegible] by Prof. Ultima [illegible] N. York

Hair 1/2 – 2 mm long.

Length at base $\frac{10-14}{280}$

= 0.036 – 0.050 mm

147

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cm
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ALEX. LEITCH,

APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

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Nymphaea elegans Hook coll. by Wright
on the Rio Grande, rec'd by Hooker
from Wright's seeds. –
Nymphaea amplexicaulis? Wright Rio Grande, dentate leaves

148

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cm
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Nymphaea microsepala? rhizomate gracili ramoso praeditum; foliis natantibus (seu saltem aquatis erectis) minoribus cordatis orbiculatis seu ~~ex~~ ellipticis orbiculatis, (lobis obtusis, acutis s. obtuse acuminatis, subtus rubellis seu nervis) parum prominulis, ~~approximatis, varius sinu clauso~~ sinu angusto, saepius clauso; stipulis latitudine longioribus ovatis margine membranaceis saepe laceris; petiolis (pedunculisque ~~pilosis~~ villosis) pilosulis saepe ~~pilosulis~~ floribus minoribus (albis s extus pallide roseis) V. odoratae extensioribus obtusiusculis elongatis cuspidatis interioribus mutatis, polline stigmate . . . baccâ globosa, semoribus totis in axillam laxam immersis.

But if only a variety of N. odorata I would say:

var. minor, sinus: foliis ~~subtus rubellis~~ ~~floribusque~~ minoribus subtus rubellis nervis minus prominentibus, sinu magis clauso, petiolis pedunculisque saepe villosis; floribus minoribus saepe extus roseis.

letter to Vasey Nov 6 1865

149

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DEALER IN
PHARMACEUTICAL
Preparations,
FINE CHEMICALS,
And all the
New Remedies.

E. L. MASSOT,
CORNER OF
Fourth and Spruce Streets,
ST. LOUIS.

DISPENSING
AND
MANUFACTURING
PHARMACEUTIST.

ALER IN
ACEUTICAL
arations,
EMICALS,
d all the
Remedies.

E. L. MASSOT,
CORNER OF
Fourth and Spruce Streets,
ST. LOUIS.

DIS
MAN
PHA

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Nymphaea alba

Caspary Index
Sem. Berol 1855
p. 26

I. Melocarpa

A depressa

a chlorocarpa

N. venusta Hedge
N. rotundifolia Hedge

b. erythrocarpa

N. erythrocarpa Hedge

B circumvallata

C. sphaerocarpa

a chlorocarpa

N. carnifolia Hedge

b. splendens

N. splendens Hedge

b. erythrocarpa

D urceolata

N. urceolata Hedge

II. Oocarpa

150

N. candida Presl
N. candidata Commerson
N. semiaperta Klinggraeff
N. neglecta Hanslentner
N. Kostelekii Pallisot
N. intermedia Weiker
N. pseudocandidata Bunge
N. quadratata Kurz & Kir.
N. odorata Aiton Jussieu.

F. aperta
F. semiaperta
G. aperta

M. W. ALEXANDER,

South-east corner Fourth and Market Streets,

ST. LOUIS.

0 1 2 3 4 5 6 7 8 9 10
cm
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Nymphaea [illegible]

Nov 8 1855

Cairo, Illinois U.S.

$\frac{14}{405}$ 0.034 mm

151

$\frac{245}{7.27} = 0.031$

0 1 2 3 4 5 6 7 8 9 10
cm
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...EX. LEITCH.

...ECARY & PHARMACEUTIST,

...R. 4TH & OLIVE STS., ST. LOUIS.

Hyophorbe Telfairiana Nov. 1905
Cairo Bot. N.G.

$\frac{15}{415} = .036$ "

152

$\frac{28}{785} = .036$

0 1 2 3 4 5 6 7 8 9 10
cm
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MO

EX. LEITCH

ECARY & PHARMACEUTIST,

4TH & OLIVE STS., ST. LOUIS.

0 1 2 3 4 5 6 7 8 9 10 cm
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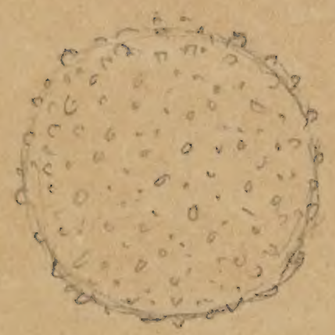
Nymphaea odorata ?

St Louis 1838

Nov 8 1865

Pollen x 415



$\frac{17}{415} = 0.041$ mm

153

Pollen x 785

$\frac{315}{7850} = 0.040$

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EX. LEITCH

ECARY & PHARMACEUTIST,

. 4TH & OLIVE STS., ST. LOUIS.

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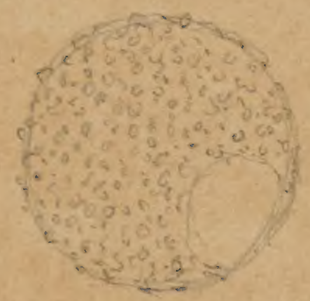
Nov 8 1865

Nymphaea alba

Frankfurt 1825

Pollen × 415



$\frac{16}{415} = 0.039$ mm

154

Pollen × 785

$\frac{316}{7850} = 0.040$

0 1 2 3 4 5 6 7 8 9 10
cm
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LEX LEITCH

HECARY & PHARMACEUTIST,

R. 4TH & OLIVE STS., ST. LOUIS.

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cm
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